



Software-defined Automation 구현을 위한 최적의 선택 HPE Synergy

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Synergy and x86 Technical Architect
Presales, HPE



Agenda

1) IT 자동화 핵심: **Infrastructure as Code**

2) 완전한 IT 자동화 구현이 가능한 HW플랫폼 “**HPE Synergy**”

- 모든 워크로드 수용 가능한 플랫폼
- 뛰어난 운영 관리성
- **API를 통한 자동화**

3) 자동화 **Demo**



현재 인프라 운영의 과제는 Digital Transformation 가속화

Quickness



Cost reduction



Risk elimination



IT 서비스 자동화

Infrastructure as Code

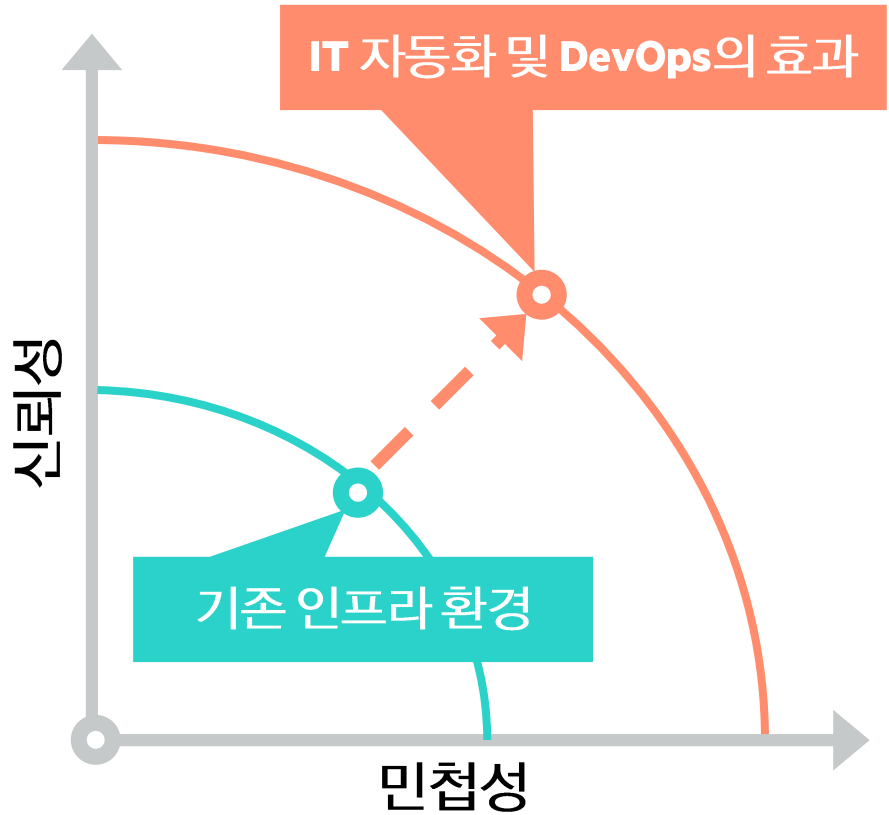
API

Automation Tool

Software Define Infrastructure



IT 자동화 - DevOps 도입의 효과: IT 인프라의 민첩성과 안정성 향상



보다 민첩한 IT 인프라



보다 안정적인 IT 인프라



시장에서의 비즈니스 이점



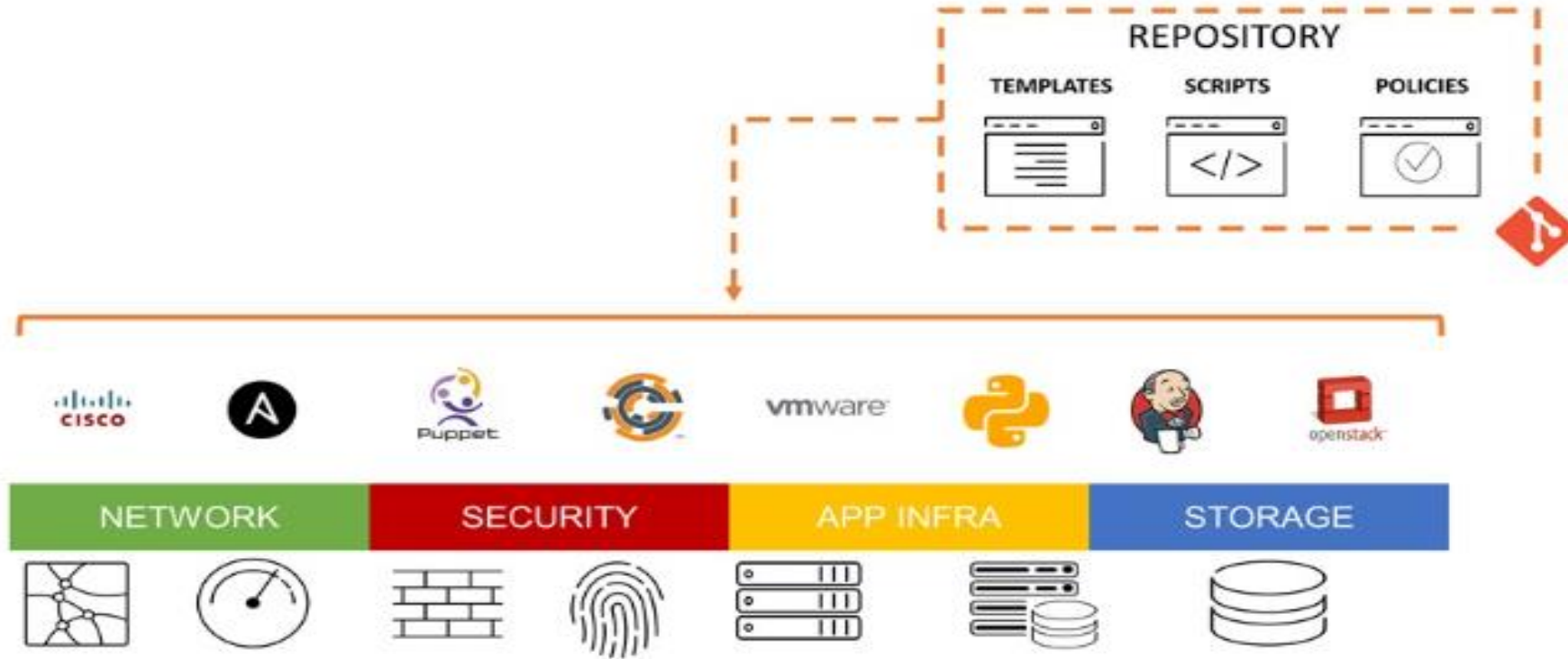
Infrastructure as Code: IT서비스 자동화의 핵심



Infrastructure as Code

소프트웨어 개발에서 수행된 개발 프로세스를 인프라 시스템, 애플리케이션, 미들웨어 배포 및 구성 관리

빠른 속도, 비용 절감, 리스크 감소와 같은 장점을 제공



Infrastructure as Code 기대 효과

Quickness

Agility

Cost
reduction

Cost

Risk
elimination

Quality

작업 공수 / 시간 단축

과거 수작업으로 하던 작업을 코딩화 / 자동화함으로써 작업 공수와 구축 시간이 단축

운영 품질 향상

작업을 코딩 / 자동화하여 작업 품질을 균일하게 유지

시스템 운영 표준화 추진

자동화 및 버전 제어를 통해 시스템 운영 정책 및 비즈니스 표준화 코드를 재사용하여 낭비를 제거하고 지속적인 통합 및 제공

업무 통제 강화

업무 운영을 자동화함으로써 내부 통제 및 보안 대책 측면에서 효과적

HW-APP까지 완전한 IT자동화 구현이 가능한 차세대 플랫폼이 필요합니다.

Hardware layer



- Firmware baseline
- Local RAID configuration
- BIOS and boot order
- LAN/SAN Connections



- Storage Volumes
- SAN Configuration
- RAID
- Snapshot



- Ethernet VLANs
- FC Networks
- Uplink to aggregation layer
- Downlinks from Cisco ToR

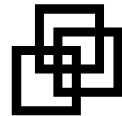


Red Hat
Ansible Automation
Platform

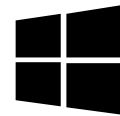
Software layer



- Configure SELinux
- Configure iptables
- Configure Network
- Configure FileSystem
- Package installation



- Data center / cluster creation
- Add ESXi host
- VMware HA configuration
- Create / start / stop virtual machine
- Create / Return / Delete Snapshot



- Join Active Directory
- Add user
- Directory structure
- Windows Update
- Windows Firewall settings
- Service settings
- Add roles and features



Red Hat
Ansible Automation
Platform

+



Application

+



Cloud

+



k8s

완전한 IT 자동화를 구현이 가능한 HW플랫폼이 바로 “HPE SYNERGY”

모든 워크로드 수용 가능한 플랫폼

모든 워크로드를 수용 할 수 있는 비즈니스 워크로드 최적화 플랫폼

뛰어난 운영 관리성

인프라 관리 및 운영 최적화를 통한 운영 단순화

API를 통한 자동화

인프라 자동화 IaC구현

※ IaC: Infrastructure as Code



Hewlett Packard
Enterprise

HPE Synergy

모든 워크로드 수용 가능한 플랫폼 “HPE SYNERGY”

Network

FCoE 기능 제공

Ethernet 10G ~ 100G / FC 16G ~ 32G



Composer

인프라 통합 모니터링 및 관리 기능

Image streamer

OS 배포 Tool



Frame



Bare metal

Virtualization

Container

Storage

모듈 당 40개 / 최대 200개

SSD / HDD 장착 가능한 내장 스토리지



※ 일반 스토리지 연결 / 구성 가능

Server

Intel Cascade Lake, ICE-Lake 지원 (2P/4P Server)

랙서버와 동일한 컴퓨팅 리소스 제공

최신 GPU 장착 가능 (A100, A10, A40까지)

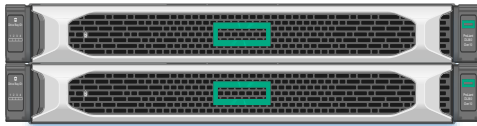


모든 워크로드 수용 가능한 플랫폼 “HPE SYNERGY”

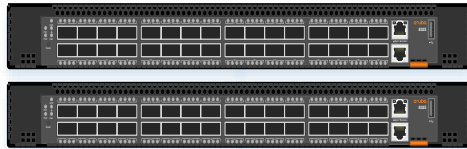
Rack Server

- 서버, 스토리지, 네트워크 개별 구매 / 통합 모니터링 부재
- 인프라 구성 / 관리 어려움
- Tirt-3 복잡한 인프라 구조

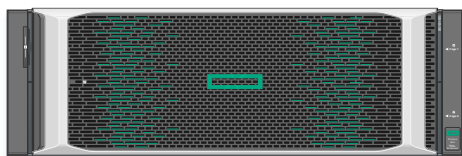
Ceph Node x2 (2U)



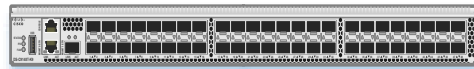
TOR Switch x2 (2U)



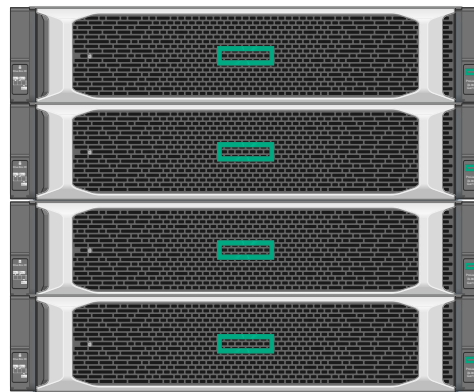
Ceph Storage x1 (4U / Disk 40ea)



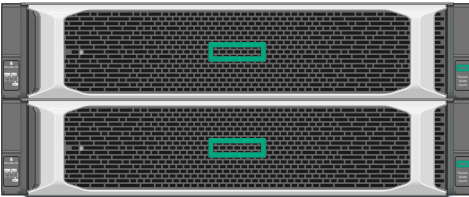
관리 Switch (1U)



RHEV Node x4 (8U)



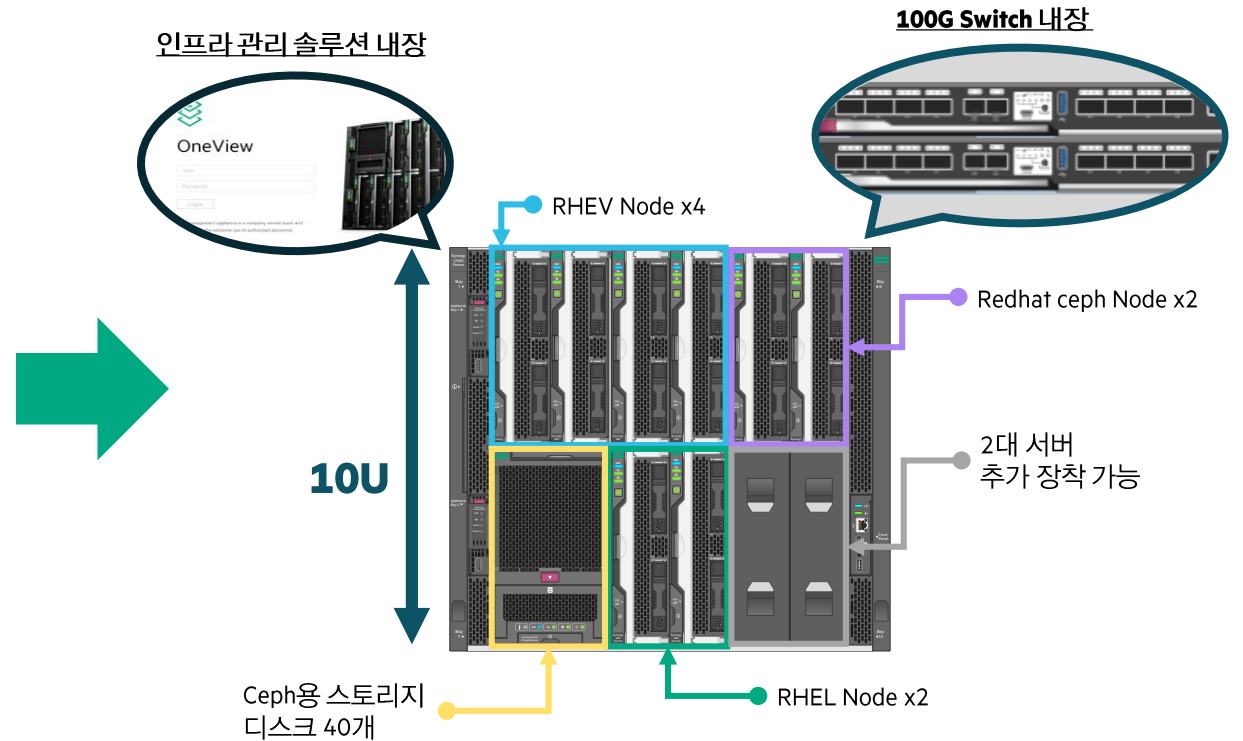
RHEL Node x2 (4U)



인프라 구성에 필요한 장비 12대 (21U)

HPE Synergy

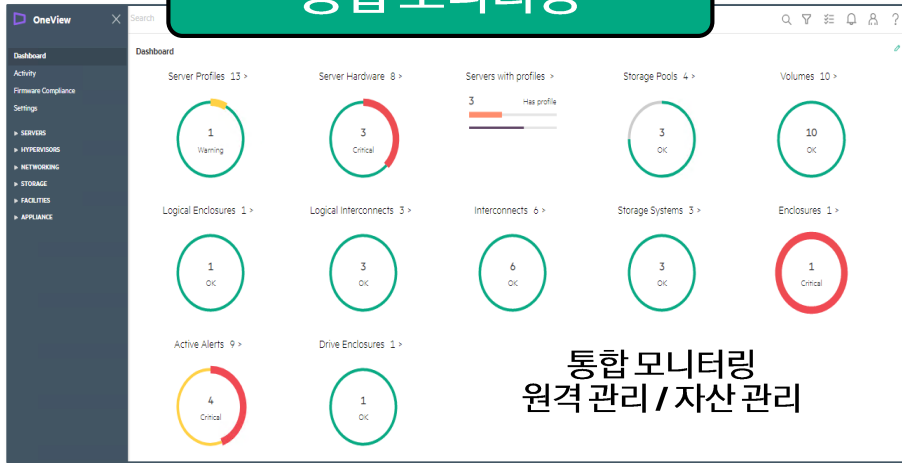
- 물리적인 서버도 **컴팩트한 10U에 통합**
- 인프라를 **통합 / 관리를 단순화**하여 **운영 단순화 및 비용 절감**
- **Tier-1** 인프라 구조



서버, 스토리지, 네트워크, 통합 관리를 하나의 인프라로 구현

뛰어난 운영 관리성 “HPE Synergy Composer”

통합 모니터링



전체 인프라
통합 관리 및 모니터링



HPE Composer

통합 관리 소프트웨어
HPE Composer

배포 및 변경

Local Storage

Integrated storage controller

Managed by OneView

Name	Type	Logical Drive ID	RAID Level	Number of Drives	Size GB	Drive Technology	Boot	Accelerator
os	Logical drive	1	RAID 1	2	n/a	not specified	Managed manually	X

SAS Mezz I storage controller

Managed by OneView

Name	Type	Logical Drive ID	RAID Level	Number of Drives	Size GB	Drive Technology	Boot	Erase on Delete	Permanent	Accelerator	
cache (000)	External logical JBOD	n/a	n/a	1	240	SATA SSD	n/a	Yes	No	n/a	X
data (112)	External logical JBOD	n/a	n/a	2	300	SAS HDD	n/a	Yes	No	n/a	X

Manage BIOS

Modified and inconsistent settings

Name	Expected
Workload Profile	Virtualization - Max Performance
Advanced Memory Protection	Fault Tolerant Memory (ADDC)
Power Regulator	Static High Performance Mode
Minimum Processor Idle Power Core C-State	No C-states
Minimum Processor Idle Power Package C-State	No Package State
Energy/Performance Bias	Maximum Performance
Collaborative Power Control	Disabled
NUMA Group Size Optimization	Clustered
Uncore Frequency Scaling	Maximum
Sub-NUMA Clustering	Enabled
Energy Efficient Turbo	Disabled
Intel UPI Link Power Management	Disabled

유지 보수

Firmware

Firmware baseline: HPE Synergy Custom SPP 201912.2019.12.19 version 2019.12.19.00

Force installation:

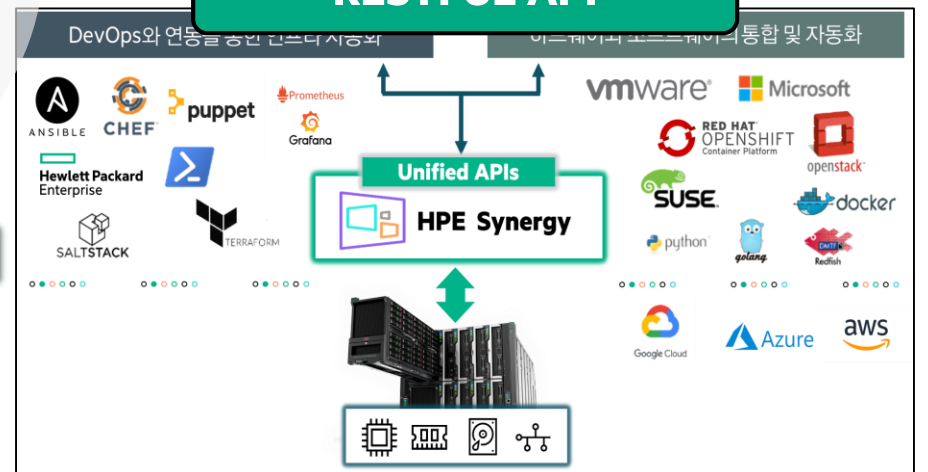
Installation Method:

- Firmware and OS Drivers using Smart Update Tools
- Firmware only using Smart Update Tools
- Firmware only

Activate firmware:

- Immediately
- At a scheduled date and time
- Not scheduled

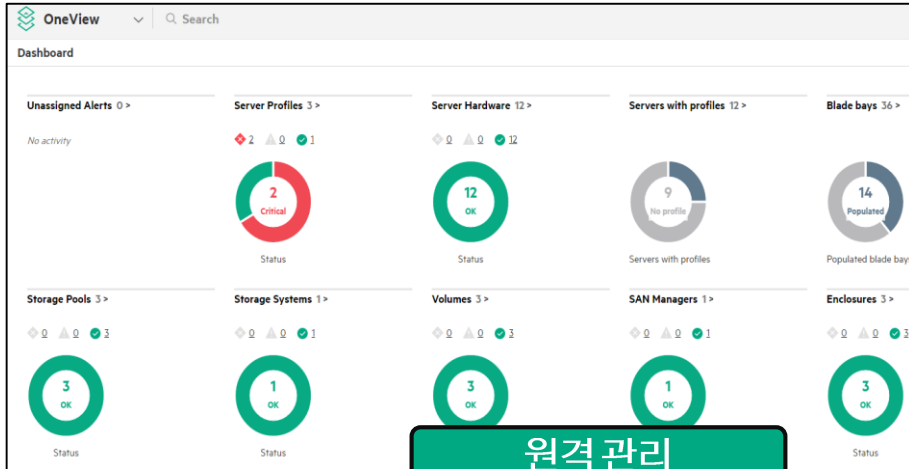
RESTFUL API



HPE Synergy Composer를 통한 통합 모니터링

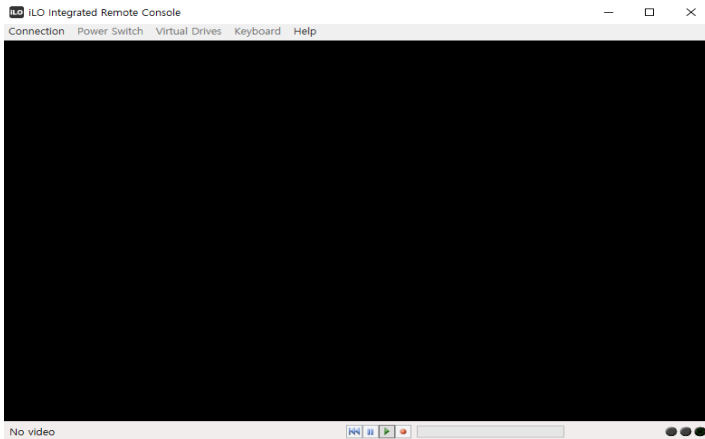
Dashboard

서버, 네트워크, 스토리지 등의 상황을 한눈에 파악할 수 있으며, 문제가 있는 부분을 즉시 확인 및 조치 가능



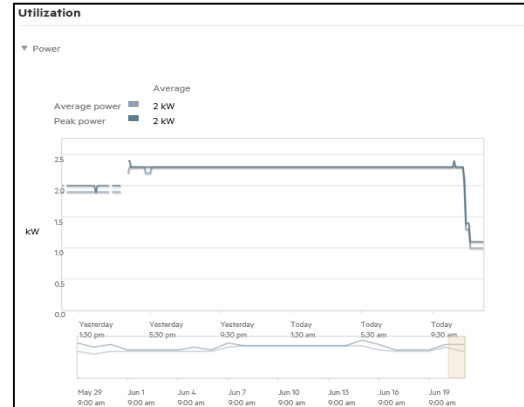
원격 관리

시스템을 원격으로 관리 가능 / Power On, Off, Reset, Console 접속 등



Utilization

사용률 모니터링 가능

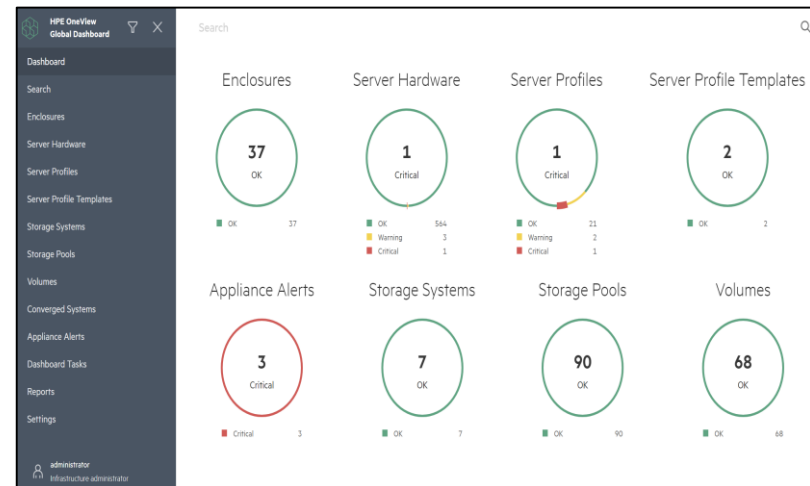


자산 관리

보다 쉽게 인프라 자산 관리 가능
csv 또는 엑셀 파일로 추출 가능

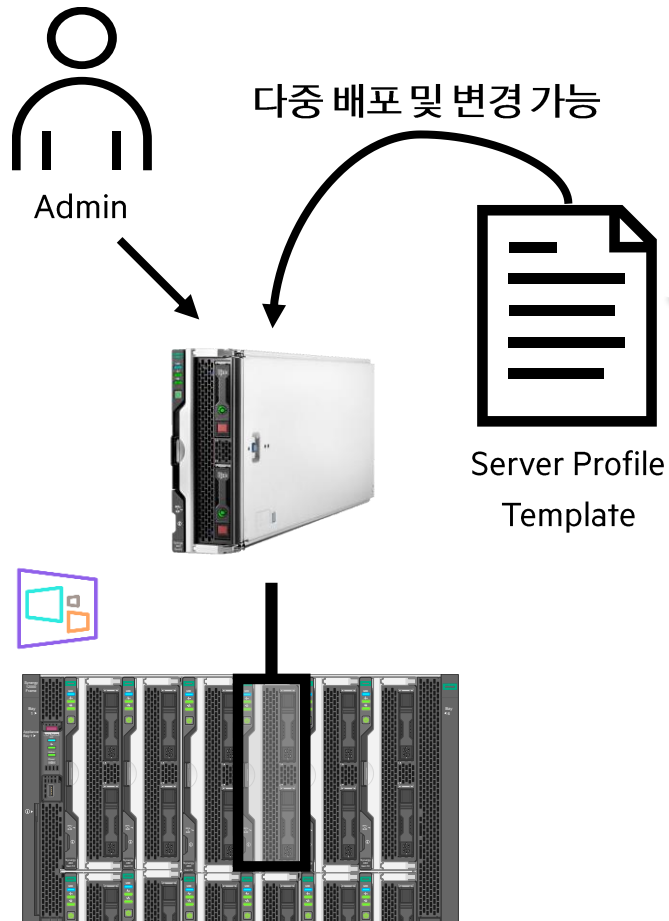


Global Dashboard







Datacenter를 하나의 View로 통합 모니터링

HPE Synergy Composer를 통해서 인프라 배포 및 변경, 장애 복구 단순화



HPE Synergy

Boot Config	Identity
Storage Volumes	Local RAID Config
BIOS & iLO Settings	OS Build Plan
 	 
Firmware	Network Edge Connectivity
IP Addresses	NIC Teaming
Network Setup	Host Config

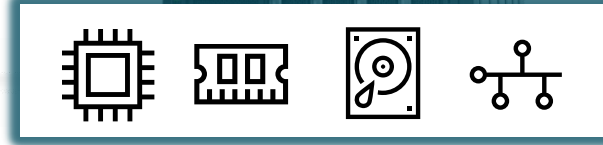
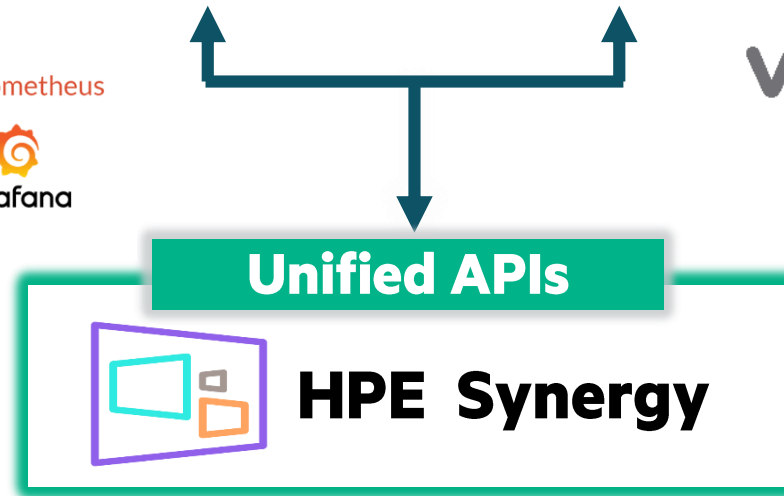
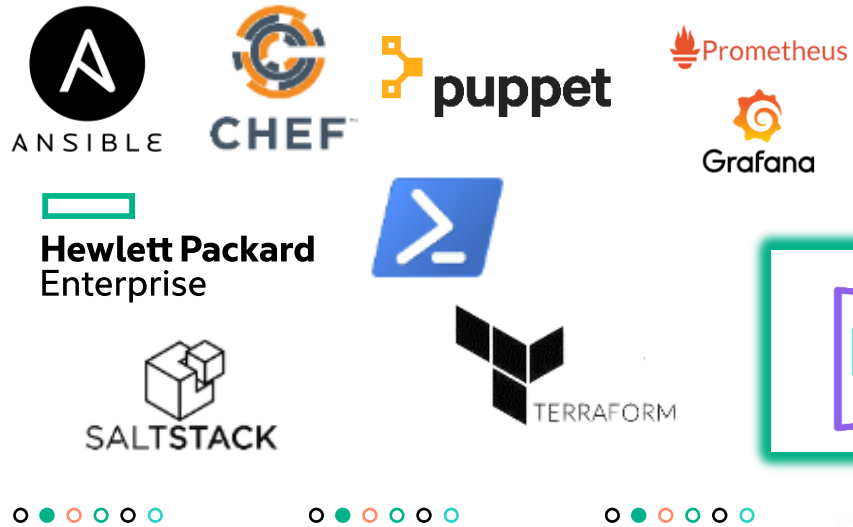


템플릿을 사용하여 프로비저닝하면 워크로드 1 개이든 100 개이든 오류를 줄이면서 더 빠르게 배포 및 변경 가능

API를 통한 인프라 통합 및 자동화

DevOps와 연동을 통한 인프라 자동화

하드웨어와 소프트웨어의 통합 및 자동화



Synergy x Ansible을 통해 Infrastructure as Code 구현

Hardware layer



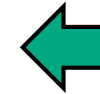
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- LAN/SAN Connections



- Storage Volumes
- SAN Configuration
- RAID
- Snapshot



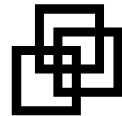
- Ethernet VLANs
- FC Networks
- Uplink to aggregation layer
- Downlinks from Cisco ToR



Software layer



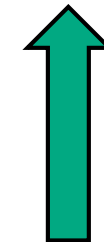
- Configure SELinux
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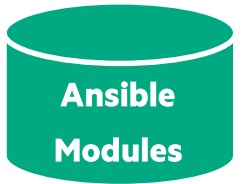
- Data center / cluster creation
- Add ESXi host
- VMware HA configuration
- Create / start / stop virtual machine
- Create / Return / Delete Snapshot



- Join Active Directory
- Add user
- Directory structure
- Windows Update
- Windows Firewall settings
- Service settings
- Add roles and features



RESTFUL API



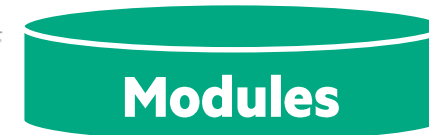
 Red Hat Ansible Automation Platform

+  Application

+  Cloud

+  k8s

Ansible Modules for HPE OneView



Why GitHub? Team Enterprise Explore Marketplace Pricing Search

Hewlett Packard Enterprise
Hewlett Packard Enterprise on github; please contact github@hpe.com for a...
<http://www.hpe.com>

Repositories 284 Packages People 34 Projects

Pinned repositories

POSH-HPEOneView
PowerShell language bindings library for HPE OneView.

PowerShell 111 49

oneview-chef
Cookbook for configuring HPE OneView resources

Ruby 16 14

oneview-ansible
Ansible Modules and Sample Playbooks for HPE OneView

Python 98 70

oneview-samples
HPE OneView Sample code parent repositories.

5 3

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HewlettPackard / **oneview-ansible** Notifications Star 98 Fork 70

Code Issues 2 Pull requests 2 Actions Projects Wiki Security Insights

master 7 branches 22 tags Go to file Code

VenkateshRavula Merge pull request #700 from HewlettPackard/lig_race_issu... 64d1002 6 days ago 2,898 commits

.github	Update ov version	2 months ago
Migration Support	touched all the older files	4 months ago
build-doc	removed icsp from exclude filters	4 months ago
examples	Fix UT	20 days ago
library	Merge pull request #700 from HewlettPackard/lig_race_issue_fix	6 days ago
test	Increase coverage	17 days ago
.coveragerc	6.10_validation	3 months ago
.gitattributes	6.10_validation	3 months ago
.gitignore	post merge	3 months ago
CHANGELOG.md	Get scopeUri for scoped user	20 days ago
CONTRIBUTING.md	6.10_validation	3 months ago
Dockerfile	6.10_validation	3 months ago
LICENSE	6.10_validation	3 months ago
README.md	Update README.md	3 months ago
TESTING.md	6.10_validation	3 months ago

About
Ansible Modules and Sample Playbooks for HPE OneView
ansible devops infrastructure-as-code hpe-oneview ansible-modules bare-metal
Readme
Apache-2.0 License

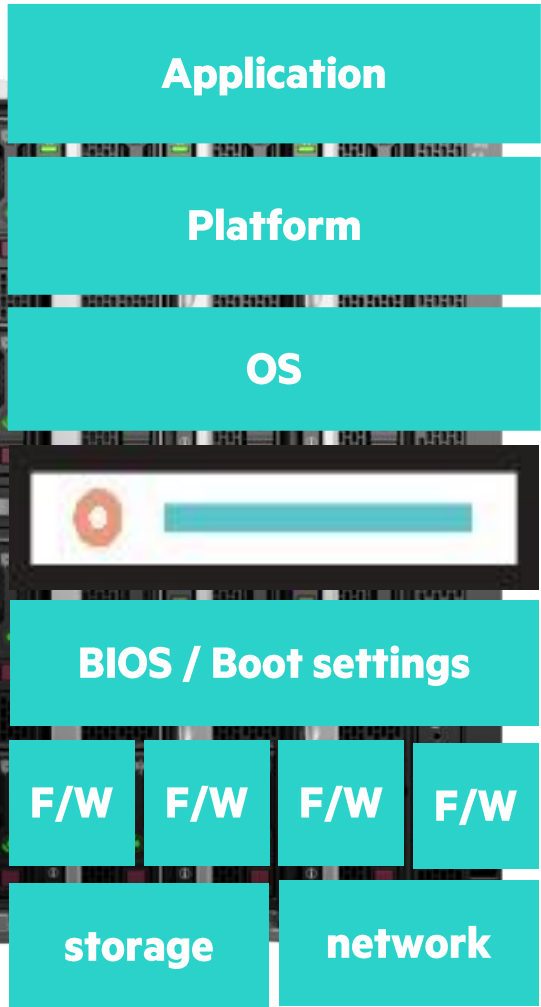
Releases 22
v6.1.0 Latest on 6 May
+ 21 releases

Packages
No packages published

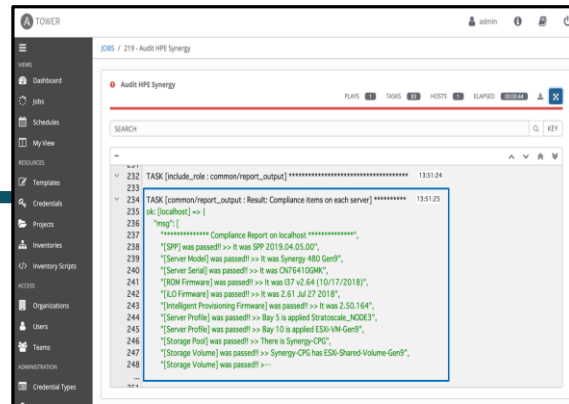
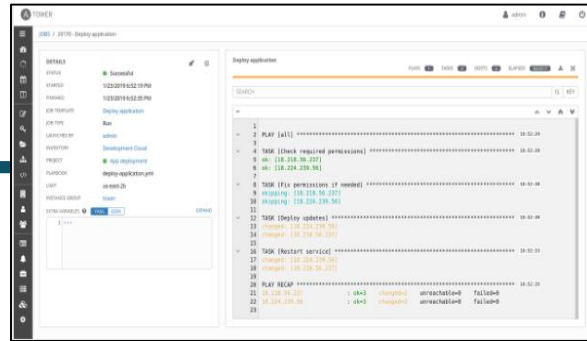
Contributors 29

<https://github.com/HewlettPackard/oneview-ansible>

Synergy and Ansible Workflow



API



Red Hat Ansible

- aws_codebuild
- azure_rm_virtualmachinescaleset
- docker_config
- gcp_compute_image
- vmware_cluster_ha
- win_path
- yum_repository

60+

HPE Synergy

- oneview_enclosure
- oneview_ethernet_network
- oneview_fc_network
- oneview_logical_interconnect_group
- oneview_network_set
- oneview_server_profile
- oneview_volume

60+

 Red Hat Ansible Automation Platform

IT 인프라 전체에 “자동화” 도입을 가속화 하는 HPE x Red Hat 협업 패키지

HPE x Red Hat Ansible Pack

① HPE Synergy



HPE Synergy

② Red Hat Ansible software



③ Hardware / software maintenance



④ Installation and Configure



⑤ Playbook Guide



HPE Synergy x Red Hat Ansible로 시작: Automation for Everyone

IT자동화에 맞는 차세대 플랫폼

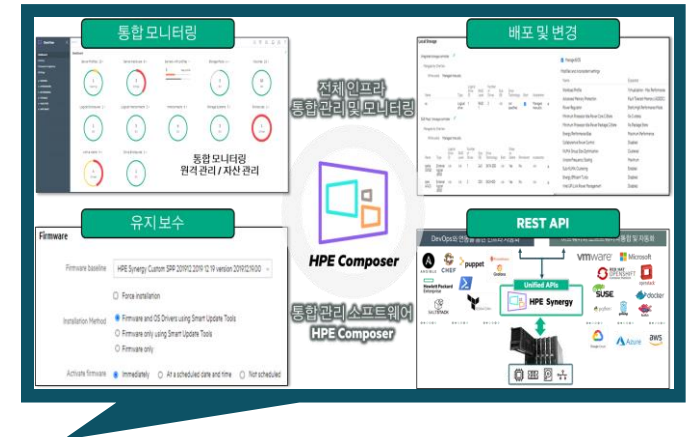
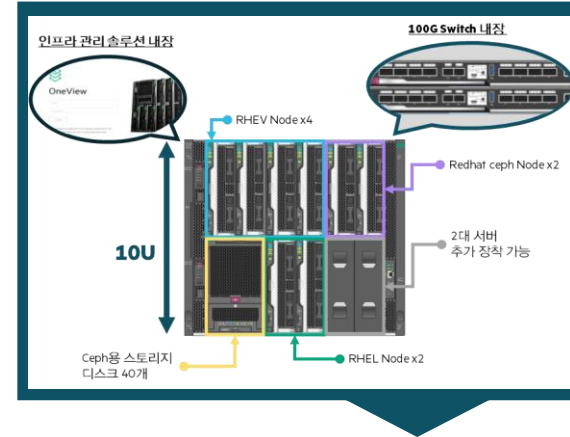
모든 워크로드를 수용 할 수 있는 비즈니스 워크로드 최적화 플랫폼

IT 운영 자동화

인프라 관리 및 운영 최적화를 통한 IT 운영 자동화

API Ready 플랫폼

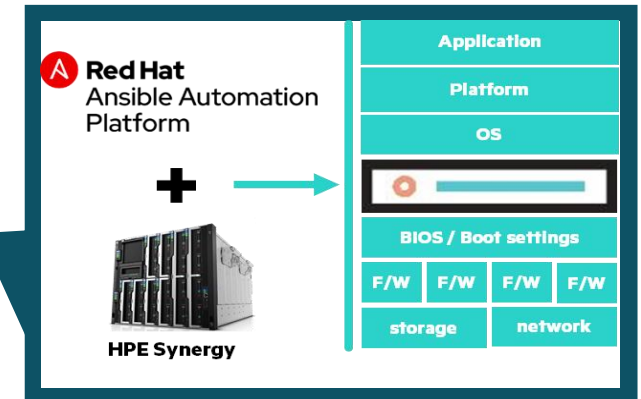
Hardware부터 Application까지 모든 인프라 자동화
DevOps, SDDC, Container, Cloud와 연계 가능



Red Hat Ansible Automation Platform



Hewlett Packard **HPE Synergy Enterprise**





엔터프라이즈 인프라 혁신은 자동화에 달려 있습니다.
HPE Synergy와 Red Hat Ansible를 통해 가속화 하십시오.

Thank You

